

INCH-POUND

MS24182L  
15 April 2003  
SUPERSEDING  
MS24182K  
10 Jan 1994

### DETAIL SPECIFICATION SHEET

RELAYS, ELECTROMAGNETIC, 100 AMPERES, 1 PST (N.O.),  
TYPE I, HERMETICALLY SEALED

This specification is approved for use by all Departments  
and Agencies of the Department of Defense.

The requirements for acquiring the relay described herein shall  
consist of this specification and the latest issue of MIL-PRF-6106.

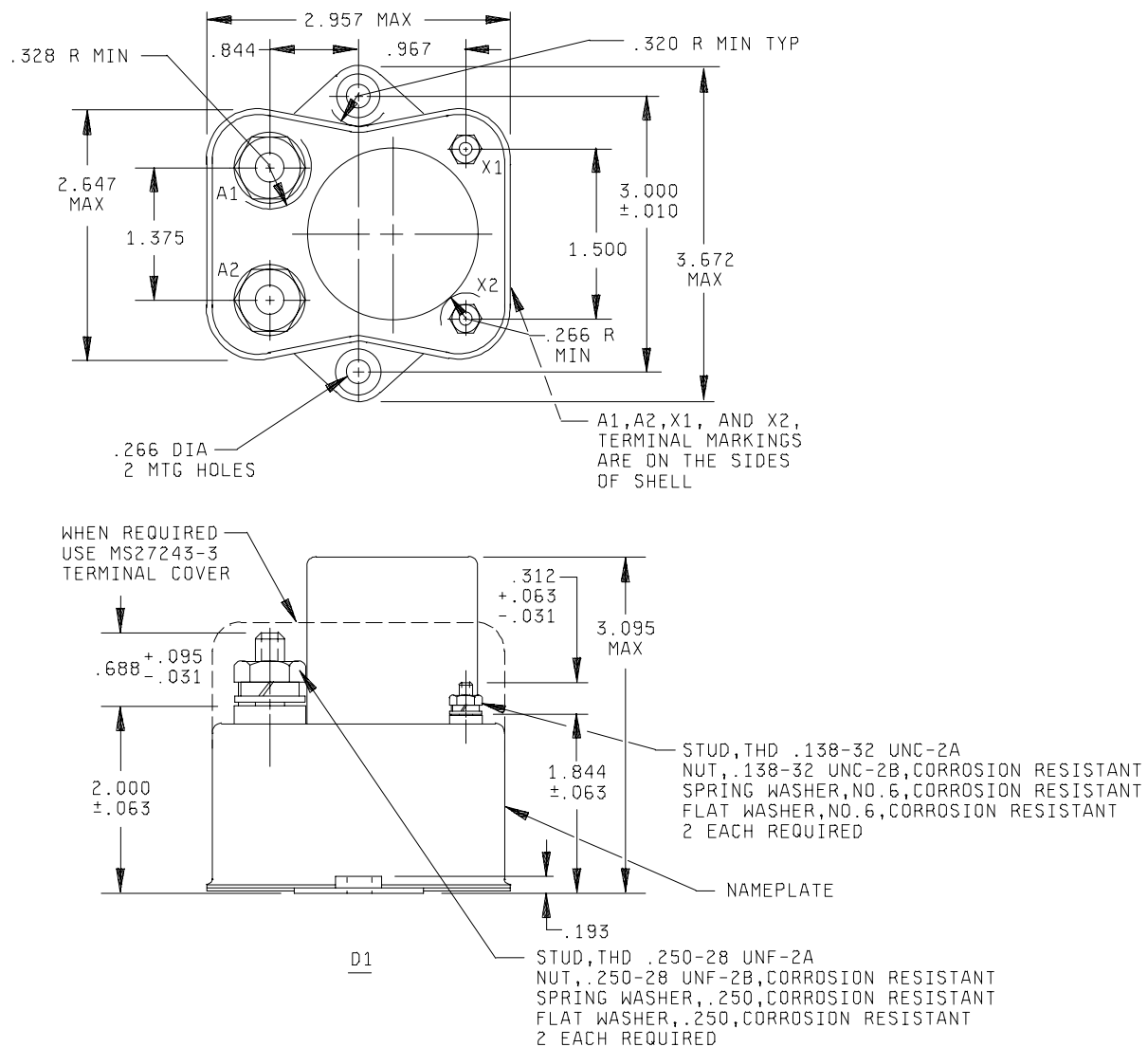
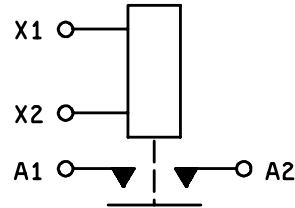


FIGURE 1. Dimensions and configurations.

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CIRCUIT DIAGRAM

Inches	mm	Inches	mm	Inches	mm
.010	0.25	.312	7.92	1.500	38.10
.031	0.79	.320	8.13	1.844	46.84
.063	1.60	.328	8.33	2.000	50.80
.094	2.39	.625	15.88	2.647	67.23
.095	2.41	.688	17.48	2.957	75.11
.138	3.51	.844	21.44	3.000	76.20
.218	5.54	.967	24.56	3.095	78.61
.240	6.10	1.375	34.93	3.672	93.27
.250	6.35	1.440	36.58	4.252	108.00
.266	6.76				

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is  $\pm 0.031$  (0.79 mm).
4. This specification sheet takes precedence over documents referenced herein.
5. Referenced Government documents of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation form a part of this document to the extent specified herein.
6. Coil and auxiliary terminals may use an additional flat washer for terminal seat.
7. Cadmium or cadmium compounds are prohibited on external hardware. A transition period to non-cadmium hardware is authorized for up to 1 year from the date of this revision.
8. Spring washer on drawing is a spring lock washer.

FIGURE 1. Dimensions and configurations - Continued.

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### REQUIREMENTS:

Dimensions and configurations: See figure 1.

Dash numbers and general characteristics: See table I.

#### Contact data:

Load ratings: See table II.

Maximum contact drop, initial: 0.150 V.

After life test: 0.175 V.

Overload current (NO): 800 amperes.

Rupture current (NO): 1,000 amperes.

#### Coil data: See table III.

Duty rating: Continuous.

RFI specification: MIL-STD-461 (applicable to coil circuits of ac operated relays).

#### Electrical data:

Minimum insulation resistance:

Initial: 100 megohms.

After life or environmental test: 50 megohms.

Dielectric strength: Sea level, 2-5 seconds:

	Initial		After life tests	
	28 V dc	115 V ac	28 V dc	115 V ac
Coil to case	1,250 V rms	1,500	1,000 V rms	1,125
Aux contacts	N/A	N/A	N/A	N/A
All other points	1,250 V rms	1,500	1,000 V rms	1,125

Dielectric strength (altitude): 1 minute.

	28 V dc	115 V ac
Coil to case	500 V rms	500
Aux contacts	N/A	N/A
All other points	500 V rms	500

#### Environmental characteristics:

Temperature range: -70°C to + 71°C.

Max altitude rating: 80,000 feet

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Shock, g-level: 25 g's.

Duration: 6-9 ms.

Maximum duration contact opening: 2 ms.

Vibration, sinusoidal: See table IV.

Acceleration: 15 g's.

Part or Identifying Number (PIN): MS24182-D1.

TABLE I. Dash number and general characteristics. <sup>1/</sup>

PIN MS24182-	Type	Coil	Terminal type	Mounting or mating socket	Auxiliary contacts	Max weight (pounds) <sup>2/</sup>
D1	I	dc	Stud	Flange	None	1.15

TABLE II. Rated contact load (amperes per pole) case grounded. <sup>1/</sup>

Type of load	Life operat ing cycles <sup>3</sup> x 10 <sup>3</sup>	28 V dc				115 V ac, 1 phase				115/200 V ac, 3 phase <sup>2/</sup>			
		Main		Aux		Main		Aux		Main		Aux	
		NO	NC	NO	NC	400 Hz	60 Hz	400 Hz	60 Hz	400 Hz	60 Hz	400 Hz	60 Hz
Resistive	50	100				100		5					
Inductive	10	100						5					
Motor	50	100				75							
Lamp <sup>3/</sup>	50	50				50		.75					
Transfer load <sup>4/</sup>													
Mechanical life reduced current	100	25						1.25					
Mixed loads	50	10				10							

<sup>1/</sup> Absence of value indicates parameter is not applicable to this specification sheet.

<sup>2/</sup> Absence of value indicates relay is not rated for three phase applications.

<sup>3/</sup> The total "On" time shall be 2 seconds  $\pm 0.05$  second and the "Off" time shall be 7 seconds  $\pm 2.0$  seconds for a simulated lamp load.

<sup>4/</sup> Transfer load indicates relay is suitable for transfer between unsynchronized ac power supplies at rating indicated.

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TABLE III. Operating characteristics.

PIN MS 24182-	Coil data											Time - milliseconds max <u>1/</u>					
	Coil	Rated			Max		Max pick-up voltage			Hold voltage <u>1/</u>	Drop out voltage <u>1/</u>	Oper-ate <u>3/</u>	Rel- ease <u>4/</u>	Contact Bounce			
		Volts <u>2/</u>	Freq Hz	$\Omega$ Res +15% -10	Volts	Amp	Nor- mal <u>1/</u>	High temp test	Cont current test					Main		Aux <u>5/</u>	
														NO	NC	NO	NC
D1	X1,X2	28	dc	78	29	.5	18	21	22.5	7.0	1.5	20	10	4.0	---	---	---

1/ Over the temperature range.2/ CAUTION: Use of any coil voltage less than rated coil voltage will compromise the operation of the relay.3/ With rated coil voltage..4/ From rated coil voltage.5/ Absence of value indicates parameter is not applicable to this specification.TABLE IV. Dash numbers and general characteristics.

Part number MS24182-	5-10 Hz	10-55 Hz	55-250 Hz	250-500 Hz	500-700 Hz	700-900 Hz	900-1,500 Hz
D1	.08 DA	.06 DA	8 g's	8 g's	5 g's	4 g's	5 g's

Qualification by similarity: See MIL-PRF-6106.

Custodians:  
Navy - AS  
Air Force - 11  
DLA - CC

Preparing activity:  
DLA - CC

(Project 5945-1206-11)

Review activities:  
Navy - EC